

STATE ADMINISTRATION

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Bill No. Organizational
Meeting

**PUBLIC EMPLOYEES'
RETIREMENT SYSTEM
of the
STATE OF MONTANA**

**ACTUARIAL VALUATION
as of June 30, 2006**

Prepared by

Mark O. Johnson, F.S.A.
Consulting Actuary



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October 9, 2006

Retirement Board
Public Employees' Retirement Administration
State of Montana

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Montana Public Employees' Retirement System as of June 30, 2006. Details about the actuarial valuation are contained in the following report. This report reflects the benefit provisions and contribution rates in effect on the valuation date.

Actuarial computations presented in this report are for purposes of analyzing the sufficiency of future contributions. Actuarial computations under GASB Statement No. 25 are for purposes of fulfilling financial accounting requirements. The computations in this report have been made on a basis consistent with our understanding of the Retirement Board's funding policies and GASB Statement No. 25. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, different determinations may be needed for other purposes.

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Respectfully submitted,

Mark O. Johnson, F.S.A., M.A.A.A., E.A.
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**MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006**

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**MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006**

**SECTION 1
SCOPE OF THE REPORT**

This report presents the results of our actuarial valuation of the System as of June 30, 2006. Actuarial computations presented in this report are for purposes of analyzing the sufficiency of future contributions.

In reading the Actuarial Certification in Section 2, please pay particular attention to the guidelines employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings depend. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the findings resulting from this valuation is presented in Section 3 of the report and the underlying calculations are summarized in more detail in Section 4.

All of the calculations of the valuation were carried out using certain assumptions as to the future experience of the System in matters affecting the actuarial cost. Appendix A summarizes the most important of these assumptions and describes the actuarial methods used to calculate costs.

Appendix B outlines the benefit provisions of the System.

The membership data which were supplied to us are summarized in Appendix C.

MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

SECTION 2
ACTUARIAL CERTIFICATION

To the best of our knowledge and belief, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the Public Employees' Retirement System as of June 30, 2006.

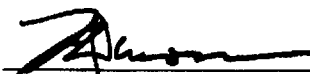
In preparing the valuation, we relied upon the financial information, membership data, and benefit provisions furnished by the System. Although we did not audit this data, we compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficiently accurate for the purposes of our calculations. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

The Retirement Board has sole authority to determine the actuarial assumptions and methods used for the valuation of the System. The Board adopted all of the actuarial methods and assumptions used in the 2006 valuation.

The findings have been determined according to actuarial assumptions and methods that were chosen on the basis of recent experience of the System and of current expectations concerning future economic conditions. In our opinion, the assumptions used in the actuarial valuation are appropriate for purposes of the valuation, are internally consistent, and reflect reasonable expectations. The assumptions represent our best estimate of future conditions affecting the System. Nevertheless, the emerging costs of the System will vary from those presented in this report to the extent that actual experience differs from that projected by the assumptions.

The actuarial valuation was prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Standards of Practice adopted by the Actuarial Standards Board of the American Academy of Actuaries. In addition, the assumptions and methods used meet the parameters set for disclosures by Governmental Accounting Standards Board Statement No. 25.

The undersigned is an independent actuary, a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, an Enrolled Actuary, and experienced in performing valuations for large public employee retirement systems.



Mark O. Johnson, F.S.A., M.A.A.A., E.A.
Principal and Consulting Actuary



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MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

SECTION 3
SUMMARY OF FINDINGS AND ANALYSIS OF THE FUNDING LEVEL

The costs of a retirement system are not determined by the actuary. The ultimate costs of a system are determined by adding all of the benefits and expenses that are paid, and subtracting all investment earnings. These costs cannot be determined exactly until the last member or beneficiary has received the final benefit payment due.

The purpose of an actuarial valuation is to provide a timely best estimate of the ultimate costs in order to allocate them to the appropriate generation of members and taxpayers. The ideal goal is for contributions to remain essentially a constant percentage of covered payroll as long as the assumptions and methods reflect the emerging experience of the system and its members with reasonable accuracy.

Membership Data

We have developed the following comparisons between the membership in this and the prior actuarial valuations:

	<u>June 30, 2006</u>	<u>June 30, 2005</u>
Number of Members		
Retirees and Beneficiaries	15,654	15,220
Vested Terminated	2,530	2,418
Non-vested Terminated*	7,178	8,153
Active	<u>27,962</u>	<u>28,213</u>
Total Membership	53,324	54,004

* Includes 2 members with a zero account balance in 2005 and 5 members with a zero account balance in 2006.

More detailed membership statistics are shown in Appendix C.

Determination of Normal Cost

The **Normal Cost** represents the cost assigned to a member for a given year such that it would meet the continuing costs of that particular benefit, if contributed each year starting with the date of membership. The Entry Age Actuarial Cost Method is designed to produce a Normal Cost that remains a level percentage of salaries, so it is best expressed as a rate.

The following chart shows the Normal Cost from the 2005 valuation compared to the Normal Cost in this valuation. **Table 1** provides more details on the Normal Cost.



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

	<u>2006 Actuarial Valuation</u>	<u>2005 Actuarial Valuation</u>
Normal Cost Rate		
Service Retirement	9.15%	9.08%
Disability Retirement	.32	.32
Death	.54	.53
Withdrawal	<u>2.16</u>	<u>2.19</u>
Total Normal Cost Rate	12.17%	12.12%

The Normal Cost Rate is expected to remain fairly stable as long as the benefits are not amended, experience emerges as assumed, the demographic characteristics of the membership remain reasonably consistent, and the actuarial assumptions are not changed.

Determination of the Actuarial Liability

The next step in the actuarial valuation process is to project all future benefit payments from the System for current members and retirees. The level of benefits currently being paid is known, but assumptions are needed to estimate how long they will be paid, and the amount and timing of the payment of future benefits for active and inactive members who are not currently receiving payments.

The summation of the discounted values of all of the projected benefit payments for all current members, at the assumed rate of return, is called the **Actuarial Present Value of Projected Benefits**. Details are shown in **Table 2** and summarized below.

(\$000)	<u>2006 Actuarial Valuation</u>	<u>2005 Actuarial Valuation</u>
Actuarial Present Value of Projected Benefits		
Retired Members	\$ 1,767,477	\$ 1,634,266
Inactive Members	128,361	122,408
Active Members	<u>2,860,478</u>	<u>2,772,310</u>
Total PVPB	\$ 4,756,316	\$ 4,528,984

The **Actuarial Present Value of Future Normal Costs** is the value of all remaining Normal Costs expected to be received over the future working lifetime of current active members. The Actuarial Present Value of Future Normal Costs is subtracted from the Actuarial Present Value of Projected Benefits to arrive at the **Actuarial Liability**, the assets that would exist if the current Normal Cost Rate had been paid for all members since entry into the System, and if all actuarial assumptions had been realized. The following is a summary from **Table 2**.

MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

(\$000)	2006 Actuarial Valuation	2005 Actuarial Valuation
Actuarial Present Value of:		
Projected Benefits	\$ 4,756,316	\$ 4,528,984
Future Normal Costs	<u>837,003</u>	<u>808,986</u>
Actuarial Liability	\$ 3,919,313	\$ 3,719,998

Development of Actuarial Value of Assets

The next step in the valuation process is to calculate the **Actuarial Value of Assets** that will be used to determine the funding status of the System. The market value of assets was reported to us as of June 30, 2006. Details from the System's financial statements are contained in **Table 3** and **Table 4**.

Because the underlying calculations in the actuarial valuation are long-term in nature, it is advantageous to smooth out short-term fluctuations in the market value of assets. The asset smoothing method projects an Expected Value of Assets using the assumed rate of investment return, then recognizes the difference between the Expected Value and the Market Value over a four-year period. The calculation of the Actuarial Value of Assets is shown in **Table 5** and summarized below.

(\$000)	Gain or (Loss)	Reserve Factor	Smoothing Reserve	Value of Assets
Market Value on June 30, 2006				\$ 3,519,815
2003-04	\$ 143,930	25%	\$ 35,983	
2004-05	1,317	50%	658	
2005-06	32,120	75%	<u>24,090</u>	
Smoothing Reserve			\$ 60,731	<u>(60,731)</u>
Actuarial Value of Assets (Market Value less Smoothing Reserve)				\$ 3,459,084

Due to the asset smoothing method, there is \$60.7 million of net investment gains that have not yet been recognized (the difference between the Actuarial and Market Value of Assets). The current positive balance of the Smoothing Reserve will gradually be reflected in the Actuarial Value of Assets.

The Actuarial Value of Assets is less than the Market Value of Assets by less than 2%. **Table 6** shows a brief history of the difference between the Actuarial and Market Values of Assets. The table also shows an estimated rate of return for the last four years on both bases.



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Unfunded Actuarial Liability

The **Unfunded Actuarial Liability** is the excess of the Actuarial Liability over the Actuarial Value of Assets, which represents a liability that must be funded over time. Contributions in excess of the Normal Cost are used to amortize the Unfunded Actuarial Liability. An **Actuarial Surplus** exists if the Actuarial Value of Assets exceeds the Actuarial Liability. The calculation of the Unfunded Actuarial Liability or Actuarial Surplus is shown in **Table 7** and summarized below.

(\$000)	2006 Actuarial Valuation	2005 Actuarial Valuation
Actuarial Liability	\$ 3,919,313	\$ 3,719,998
Actuarial Value of Assets	<u>3,459,084</u>	<u>3,179,010</u>
Unfunded Actuarial Liability	\$ 460,229	\$ 540,988
Funded Ratio	88%	85%

The **Funded Ratio** is equal to the Actuarial Value of Assets divided by the Actuarial Liability. A Funded Ratio of 100% means the Actuarial Value of Assets equals the Actuarial Liability, and the System could be financed by contributions equal to the Normal Cost, if all future experience emerges as assumed.

Actuarial Gains and Losses

Comparing the Unfunded Actuarial Liability as of two valuation dates does not provide enough information to determine if there were actuarial gains or losses. The correct comparison is between the Unfunded Actuarial Liability on the valuation date and the Expected Unfunded Actuarial Liability projected from the prior valuation date using the actuarial assumptions in effect for the one-year period.

Table 8 shows the Actuarial Liability as of June 30, 2005, and the elements to project that figure forward to June 30, 2006: the Normal Cost, less benefits paid, plus a charge for interest at the assumed rate of 8% per year.

The same table shows the Actuarial Value of Assets as of June 30, 2005, and the elements to project that figure forward to June 30, 2006: the net cash flow (contributions less benefits), plus a credit for interest at the assumed rate of 8%.

The following is a summary of the actuarial gains or losses during the one-year period.



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

	(\$000)
Unfunded Actuarial Liability	
Actual as of June 30, 2005	\$ 540,988
Expected as of June 30, 2006	\$ 533,845
Actual as of June 30, 2006	<u>460,229</u>
Actuarial (Gain) or Loss	\$ (73,616)
(Gain) or Loss by Source	
Investment Gain	\$ (39,882)
Liability Gain	<u>(33,734)</u>
Net from All Sources	\$ (73,616)

Plan Choice Rate

The Plan Choice Rate is shown in Table 9-B. The Plan Choice Rate is updated in even numbered years' actuarial valuations.

The Plan Choice Rate will be adjusted, if necessary, when the results of the June 30, 2006 Actuarial Valuations have been published.

The current employer contribution rate for members of the Defined Contribution Retirement Plan (DCRP) and the Optional Retirement Plan (ORP) who would have been in PERS is determined as follows:

(Percent of Salary)	DCRP	ORP
Member Account in DCRP or ORP	4.19%	4.49%
Long-term Disability Plan (DCRP only)	0.30	0.00
Education Fund	0.04	0.04
Plan Choice Rate to DBRP (PCR)	<u>2.37</u>	<u>2.37</u>
Total Contribution Rate	6.90%	6.90%

The Plan Choice Rate (PCR) is the percent of the employer contribution allocated to the Defined Benefit Retirement Plan for members who choose the Defined Contribution Retirement Plan or the Optional Retirement Plan. The PCR is required by statute and actuarially determined to maintain the financial stability of the Defined Benefit Retirement Plan (DBRP).

The Legislature did not want the cost of the DBRP to increase due to the elections of members to join the alternative programs. The enabling legislation appropriately established the PCR to provide a mechanism to prevent the costs of the DBRP from increasing solely due to the transfer of members to the other plans.

Without the PCR, there are two reasons the DBRP costs could potentially increase; one is the financing of the Unfunded Actuarial Liability (UAL) at the time of the transfers, and the other is the potential for an increase in the Normal Cost Rate.



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

1. If there is an Unfunded Actuarial Liability in the DBRP at the time of the transfers, the simple fact that there will be fewer members in the DBRP to spread the amortization of the UAL will increase the rate of DBRP pay necessary to amortize the UAL. The PCR provides that the amortization of the DBRP UAL at the time of the transfer will be financed over the sum of payroll of the DBRP and DCRP members. This method ensures a continuation of the amortization schedule that was in place just prior to the transfers.

The legislation provided a starting point for this element of the PCR equal to 2.37% of the payroll of DCRP members and the ORP members who would have been in the DBRP.

2. Compared to the members who remain in the DBRP, if the transferring DCRP and ORP members are, on average, either younger at the time of hire, or have a shorter career, the DBRP Normal Cost Rate could increase. The DBRP membership will become, on average, more expensive because the average length of service at retirement will be longer or the career over which the benefit can be financed will be shorter. The dollar amount of the increase in the DBRP Normal Cost will be financed as a percentage of DCRP and ORP payroll. In other words, the DCRP and ORP members will be funding any increase in the Normal Cost of the DBRP due to their election not to participate in the DBRP.

The legislature did not provide a starting point for this element of the PCR because it depends on the demographics of those who elect the alternative programs.

Unfunded Actuarial Liability: Table 9-A shows the development of the Unfunded Actuarial Liability of the DBRP that is allocated to the members of the alternative programs. The Unfunded Actuarial Liability as of June 30, 2005 was brought forward to June 30, 2006.

(\$000)	
Unfunded Actuarial Liability	
PCR-UAL as of June 30, 2005	\$ 18,354
Adjustments as of June 30, 2006	
Assumed Earnings at 8%	1,468
PCR Contributions with 8% Earnings	(1,481)
Recognition of Prior Investment Losses	413
PCR-UAL as of June 30, 2006	\$ 18,754

Normal Cost Rate: The statute calls for the members of the alternative programs who could have been in the DBRP to finance the increase in the Normal Cost Rate associated with their transfer. **Table 9-B** shows that the Normal Cost Rate for the DBRP would have been 12.17% had the alternative program options not existed. The Normal Cost Rate in this valuation for the DBRP members is 12.17% of salaries. Since the Normal Cost Rate for the DBRP is equal to the Normal Cost Rate that the DBRP would have had if the alternative programs did not exist as of June 30, 2006, the Normal Cost Rate assigned to the Plan Choice Rate as of June 30, 2006, the PCT-NCR, is 0.00% of payroll for the alternative programs.



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Amortization Test: The current PCR, less the PCR-NCR, will be available to amortize the remaining PCR-UAL. The initial amortization period was set at 12.75 years as of June 30, 1998. The amortization period will decline by one year each biennium, but the PCR will not change unless the amortization period is more than 10 years different than the scheduled amortization period.

	Amortization of PCR-UAL		
	Baseline	Acceptable Range	
1998 Valuation	12.75	2.75	22.75
2000 Valuation	11.75	1.75	21.75
2002 Valuation	10.75	0.75	20.75
2004 Valuation	9.75	n/a *	19.75
2006 Valuation	8.75	n/a *	18.75

* Assumes immediate amortization of PCR UAL.

Lower end only applies after 2002 if the PCR UAL is fully amortized.

Calculation of the PCR: For this display, we have used the acceptable range for the 2006 Valuation. The PCR, after being reduced for the PCR Normal Cost Rate, must be sufficient to amortize the PCR Unfunded Actuarial Liability over 18.75 years. If not, the PCR is increased such that the amortization period is reduced to 18.75 years. If the PCR will amortize the PCR-UAL over less than 18.75 years, it is not adjusted.

The following table shows that the 2.37% of payroll available will amortize the PCR-UAL over a period of 17.11 years. This is inside the statutory corridor, so the PCR does not need to be increased.

PCR – UAL as of June 30, 2006 (\$000)	\$ 18,754
PCR Available for Amortization	
Current PCR Amortization Rate	2.37%
Less, PCR – Normal Cost Rate	<u>0.00%</u>
PCR Available for Amortization	2.37%
Years to Amortize PCR – UAL from June 30, 2006	17.11 Years
Maximum Years to Amortize PCR – UAL	18.75 Years
Current PCR is Sufficient	



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Calculation of Contribution Rate

The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment for the Unfunded Actuarial Liability, if any, over no more than 30 years. The calculations are shown in **TABLE 10** and summarized below.

	2006 Actuarial Valuation	2005 Actuarial Valuation
Statutory Funding Rate	13.80%	13.80%
Transfer to Education Fund	(0.04)	(0.04)
Normal Cost Rate	<u>(12.17)</u>	<u>(12.12)</u>
Available for Amortization	1.59%	1.64%
Unfunded Actuarial Liability of DBRP	\$ 460,229	\$ 540,988
Less, Funded by PCR	<u>(18,754)</u>	<u>(18,354)</u>
Net UAL for DBRP Funding	\$ 441,475	\$ 522,634
Years to Amortize	Does Not Amortize	Does Not Amortize

Based on the current Actuarial Value of Assets and all future experience emerging as assumed, the Unfunded Actuarial Liability will not be amortized over the next 30 years. As a point of interest, we have calculated the additional revenue needed to amortize the Unfunded Actuarial Liability over 30 years.

Normal Cost Rate	12.17%
30-Year Amortization Payment	<u>2.60</u>
30-Year Contribution Rate	14.77%
Current Statutory Rate for DBRP	13.80%
Less, Educational Fund	<u>(0.04)</u>
Available to Fund the DBRP	13.76%
Estimated Shortfall	1.01%

Based on the assumptions contained in this report, a funding rate of 14.77% of payroll would be sufficient to fund the current and projected benefits from the System. The 0.04% for the Educational Fund would be in addition to this rate.

Disclosure Information - GASB No. 25

The disclosure of the Schedule of Funding Progress and the Solvency Test calculated in accordance with Statement No. 25 of the Governmental Accounting Standards Board are shown in **Tables 11 and 12**.

MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Summary of Key Valuation Results

	2006 Valuation	2005 Valuation	Percentage Change
1. Total Membership			
A. Active Members	27,962	28,213	-0.9%
B. Vested Terminated Members	2,530	2,418	4.6%
C. Non-vested Terminated Members	7,178	8,153	-12.0%
D. Retired Members and Beneficiaries	<u>15,654</u>	<u>15,220</u>	2.9%
E. Total Membership	53,324	54,004	-1.3%
2. Annual Salaries			
A. Annual Total (\$Thousands)	\$ 892,825	\$ 854,570	4.5%
B. Annual Average per Active Member	\$ 31,930	\$ 30,290	5.4%
3. Average Annual Allowance Payable			
A. Service Retirement	\$ 10,500	\$ 9,975	5.3%
B. Disability Retirement	\$ 7,465	\$ 7,189	3.8%
C. Survivors & Beneficiaries	\$ 7,902	\$ 7,593	4.1%
D. All Payees	\$ 10,029	\$ 9,537	5.2%
4. Actuarial Liability (\$Thousands)			
A. Active Members	\$ 2,023,475	\$ 1,963,324	3.1%
B. Inactive Members	128,361	122,408	4.9%
C. Retired Members and Beneficiaries	<u>1,767,477</u>	<u>1,634,266</u>	8.2%
D. Total	\$ 3,919,313	\$ 3,719,998	5.4%
5. Value of System Assets (\$Thousands)			
A. Fair Value	\$ 3,519,815	\$ 3,242,429	8.6%
B. Smoothing Reserve	<u>(60,731)</u>	<u>(63,419)</u>	-4.2%
C. Actuarial Value	\$ 3,459,084	\$ 3,179,010	8.8%
D. Ratio of Actuarial Value to Fair Value	98%	98%	
6. Funded Status			
A. Unfunded Actuarial Liability (\$Thousands)	\$ 460,229	\$ 540,988	-14.9%
B. Less, PCR-UAL	<u>\$ (18,754)</u>	<u>\$ (18,354)</u>	2.2%
C. Net Unfunded Actuarial Liability	\$ 441,475	\$ 522,634	-15.5%
D. Funded Ratio (5C + 4D)	88%	85%	
E. Net Funded Ratio (5C + (4D+6B))	89%	86%	
7. Contribution Rates (percent of salaries)			
A. Statutory Funding Rate	13.80%	13.80%	0.0%
B. Less, Transfer to DB Ed Fund	(0.04)%	(0.04)%	0.0%
C. Net Statutory Contribution Rate	13.76%	13.76%	0.0%
D. Normal Cost Rate	<u>12.17%</u>	<u>12.12%</u>	0.4%
E. Available for Amortization of UAL (7C - 7D)	1.59%	1.64%	-3.0%
F. Period to Amortize	Does not amortize	Does not amortize	
G. Projected 30-Year Level Funding Rate	14.77%	15.34%	-3.7%
H. Projected Shortfall (Surplus) (7G - 7C)	1.01%	1.58%	-36.1%



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**MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006**

**SECTION 4
ACTUARIAL VALUATION RESULTS**

The following tables document the findings of the actuarial valuation.

TABLE 1	NORMAL COSTS
TABLE 2	SUMMARY OF ACTUARIAL REQUIREMENTS
TABLE 3	STATEMENT OF SYSTEM ASSETS
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TABLE 5	ACTUARIAL VALUE OF ASSETS
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MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
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TABLE 1
NORMAL COSTS

	2006 Actuarial Valuation	2005 Actuarial Valuation
Normal Cost Rate		
Service Retirement	9.15%	9.08%
Disability Retirement	.32	.32
Death	.54	.53
Withdrawal	<u>2.16</u>	<u>2.19</u>
Total Normal Cost Rate	12.17%	12.12%
 Annual Normal Cost (\$000)	 \$ 111,009	 \$ 105,819
 Present Value of Future Normal Costs (\$000)	 \$ 837,003	 \$ 808,986



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 2
SUMMARY OF ACTUARIAL REQUIREMENTS

(\$000)	2006 Actuarial Valuation	2005 Actuarial Valuation
Retired Members		
Service Retirement	\$ 1,564,199	\$ 1,440,992
Disability Retirement	63,865	62,246
Beneficiaries	<u>139,413</u>	<u>131,028</u>
Retired Member Total	1,767,477	1,634,266
Inactive Members	128,361	122,408
Active Members		
Service Retirement	2,518,650	2,434,325
Disability Retirement	59,769	59,138
Pre-retirement Death	124,006	118,869
Withdrawal	<u>158,053</u>	<u>159,978</u>
Active Member Total	2,860,478	2,772,310
Present Value of Future Projected Benefits	\$ 4,756,316	\$ 4,528,984
 Present Value of Future Normal Costs	 <u>837,003</u>	 <u>808,986</u>
Actuarial Liability	\$ 3,919,313	\$ 3,719,998



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 3
STATEMENT OF SYSTEM ASSETS

(\$000)	2006	2005
Current Assets		
Cash	\$ 92,502	\$ 59,302
Accounts Receivable	1,226	926
Interest Receivable	7,173	7,466
Other Receivable	<u>480</u>	<u>585</u>
Total Current Assets	101,381	68,279
Investments, at Fair value		
Mortgages and Commercial Loans	43,097	50,658
Investment Pools	3,367,537	3,115,493
Other Investments	<u>8,636</u>	<u>8,526</u>
Total Investments	3,419,270	3,174,677
Securities Lending Collateral	67,407	140,880
Other Assets:	<u>102</u>	<u>320</u>
Total Assets	\$ 3,588,160	\$ 3,384,156
Liabilities		
Accounts Payable	\$ 495	\$ 422
Securities Lending Liability	67,407	140,880
Compensated Absences	233	253
Other	<u>210</u>	<u>172</u>
Total Liabilities	\$ 68,345	\$ 141,727
Net System Assets	\$ 3,519,815	\$ 3,242,429



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 4
STATEMENT OF CHANGES IN SYSTEM ASSETS

(\$000)	<u>2006</u>
Contributions	
Employer	\$ 63,089
Plan Member	66,002
Other	<u>25,714</u>
Total Contributions	154,805
Investments Income	
Net Appreciation/(Depreciation) In fair value of investments	185,485
Investment Earnings	<u>113,036</u>
Total Investment Income	298,521
Less Investment Expense	<u>(5,008)</u>
Net Investment Income	293,513
Securities Lending Income	5,130
Less Securities Lending Expense	<u>(5,011)</u>
Net Securities Lending Income	119
Total Net Investment Income after SLI	293,632
Total Additions	\$ 448,437
Benefits and Expenses	
Benefit Payments	\$ 153,886
Refunds to Members	12,754
Refunds to Other Plans	568
Transfers to DCRP	1,064
Transfers to ORP	183
Administrative Expense	<u>2,661</u>
Total Deductions	171,116
Accounting Adjustments	65
Net Increase in System Assets	\$ 277,386
Net System Assets	
Beginning of the Year	\$ 3,242,429
End of the Year	\$ 3,519,815



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 5
ACTUARIAL VALUE OF ASSETS

(\$000)

Fiscal Year	Cash Flow	Expected Value	Gain or (Loss)	Market Value
2002-03				\$ 2,695,824
2003-04	\$ (24,529)	\$ 2,885,980	\$ 143,930	3,029,910
2004-05	(29,990)	3,241,112	1,317	3,242,429
2005-06	(13,585)	3,487,695	32,120	3,519,815

Fiscal Year	Gain or (Loss)	Reserve Factor	Smoothing Reserve
2003-04	\$ 143,930	25%	\$ 35,983
2004-05	1,317	50%	658
2005-06	32,120	75%	24,090
			\$ 60,731

Fair Market Value on June 30, 2006	\$ 3,519,815
Less, Asset Smoothing Reserve	(60,731)
Actuarial Value of Assets on June 30, 2006	\$ 3,459,084



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**MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006**

**TABLE 6
HISTORY OF ACTUARIAL VALUE OF ASSETS**

(\$000) June 30	Market Value		Actuarial Value ⁽¹⁾		Ratio of Actuarial to Market
	(\$000)	Estimated Return ⁽²⁾	(\$000)	Estimated Return ⁽²⁾	
2000	\$ 2,935,779		\$ 2,843,347		97%
2001	2,777,338	(5.1)%	3,043,751	7.3%	110%
2002	2,564,498	(7.3)%	3,076,781	1.4%	120%
2003	2,695,824	6.5%	3,033,210	(0.3)%	113%
2004	3,029,910	13.4%	3,047,287	1.3%	101%
2005	3,242,429	8.0%	3,179,010	5.3%	98%
2006	3,519,815	9.0%	3,459,084	9.3%	98%

Note:

- (1) Asset Method adopted for 2000 valuation with retroactive calculation to June 30, 1997
- (2) Estimated returns are net of all investment and administrative expenses paid by the System and assuming uniform cash flow throughout the year



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MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 7
FUNDED STATUS

(\$000)	2006 Actuarial Valuation	2005 Actuarial Valuation
Actuarial Value of Assets		
Actuarial Liability	\$ 3,919,313	\$ 3,719,998
Actuarial Value of Assets	<u>3,459,084</u>	<u>3,179,010</u>
Unfunded Actuarial Liability	\$ 460,229	\$ 540,988
Funded Ratio (AVA)	88%	85%
Market Value of Assets		
Actuarial Liability	\$ 3,919,313	\$ 3,719,998
Market Value of Assets	<u>3,519,815</u>	<u>3,242,429</u>
Unfunded Actuarial Liability	\$ 399,498	\$ 477,569
Funded Ratio (MVA)	90%	87%



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 8
ACTUARIAL GAINS AND LOSSES

(\$000)	<u>Expected</u>	<u>Actual</u>	<u>(Gain) or Loss</u>
2005 Actuarial Liability	\$ 3,719,998		
Normal Costs	105,819		
Benefits Paid	(167,887)		
Expected Earnings at 8%	<u>295,117</u>		
Actuarial Liability at June 30, 2006	\$ 3,953,047	\$ 3,919,313	\$ (33,734)
 2005 Actuarial Value of Assets	 \$ 3,179,010		
Net Cash Flow	(13,585)		
Expected Earnings at 8%	<u>253,777</u>		
Actuarial Value of Assets	\$ 3,419,202	3,459,084	(39,882)
 Unfunded Actuarial Liability as of June 30, 2006	 \$ 533,845	 \$ 460,229	 \$ (73,616)
 Summary Actuarial (Gain) or Loss by Source			
Investment (Gain) or Loss			\$ (39,882)
Liability (Gain) or Loss			<u>(33,734)</u>
Total Actuarial (Gain) or Loss			\$ (73,616)



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 9-A
PLAN CHOICE RATE UNFUNDED ACTUARIAL LIABILITY – JUNE 30, 2006

(\$000)

PCR – UAL Calculations for 2005-06

PCR – UAL as of June 30, 2005			\$	18,354
Assumed Interest at 8% per year				1,468
Less, PCR Contributions to DBRP during 2005-06, reduced by normal cost				(1,426)
Less, Interest at 8% on PCR Contributions to DBRP during 2004-05				(55)
Recognition of Prior Investment (Gain) or Loss				
2000-01 Balance	\$	0		0
2001-02 Balance	\$	0		
2002-03 Balance	\$	413	100%	<u>413</u>

PCR - Unfunded Actuarial Liability at June 30, 2006 **\$ 18,754**



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 9-B
PLAN CHOICE RATE*

(\$000)

PCR - Normal Cost Rate

Normal Cost Rate		
DBRP Members Only		12.17%
Including DCRP and ORP Members		<u>12.17%</u>
Difference	(A)	0.00%
Payroll as of June 30, 2006 (\$000)		
DBRP Members Only	(B)	\$ 917,801
DCRP and ORP Members	(C)	\$ 61,621
PCR - Normal Cost Rate	(A) x (B) ÷ (C)	0.00%

PCR - UAL Amortization

PCR - UAL as of June 30, 2006 (Table 9-A)	\$ 18,754
PCR Available for Amortization	
Current PCR Amortization Rate	2.37%
Less, PCR - Normal Cost Rate	<u>0.00%</u>
PCR Available for Amortization	2.37%
Years to Amortize PCR - UAL from June 30, 2006	17.11 Years
Maximum Years to Amortize PCR - UAL from June 30, 2006	18.75 Years
Current PCR is Sufficient	



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

TABLE 10
CALCULATION OF CONTRIBUTION RATE

	2006 Actuarial Valuation	2005 Actuarial Valuation
Statutory Funding Rate		
Members	6.90%	6.90%
Employers	6.80%	6.80%
State	<u>.10%</u>	<u>.10%</u>
Total	13.80%	13.80%
Transfer to Education Fund	<u>(.04)%</u>	<u>(.04)%</u>
Net Contribution to DBRP	13.76%	13.76%
Normal Cost Rate	12.17%	12.12%
Funding Rate Available for Amortization	1.59%	1.64%
(\$000)		
Unfunded Actuarial Liability		
DBRP (Table 7)	\$ 460,229	\$ 540,988
Less, PCR-UAL Funded by DCRP & ORP (Table 9-B)	<u>(18,754)</u>	<u>(18,354)</u>
Funded by DBRP	\$ 441,475	\$ 522,634
Years to Amortize	Does Not Amortize	Does Not Amortize
Calculated Contribution Rate		
Normal Cost Rate	12.17%	12.12%
Amortization Payment		
Available	1.59%	1.64%
Additional Contribution for 30-year Amortization	<u>1.01%</u>	<u>1.58%</u>
Total Amortization	2.60%	3.22%
Total Calculated Rate	14.77%	15.34%



**MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006**

DISCLOSURE INFORMATION - GASB No. 25

TABLE 11

**SCHEDULE OF FUNDING PROGRESS
(DOLLARS IN THOUSANDS)**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Funded Ratio	Unfunded AAL (UAAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
June 30, 1994	\$1,366,864	\$1,625,720	84%	\$258,856	\$572,973	45%
June 30, 1996	1,629,707	1,826,207	89	196,500	608,592	32
June 30, 1998	2,113,314	2,298,702	92	185,388	660,579	28
June 30, 2000	2,843,347	2,273,407	125	(569,940)	725,692	(79)
June 30, 2002	3,076,781	3,077,764	100	983	808,747	0
June 30, 2004	3,047,287	3,514,085	87	466,798	832,847	56
June 30, 2005	3,179,010	3,719,998	85	540,988	847,431	64
June 30, 2006	3,459,084	3,919,313	88	460,229	880,708	52

TABLE 12

**SOLVENCY TEST
(DOLLARS IN THOUSANDS)**

Actuarial Valuation Date	(1)	(2)	(3)	Actuarial Value of Assets	Coverage Ratios		
	Active Member Accounts	Inactive Actuarial Liability	Employer Financed Active Liability		(1)	(2)	(3)
June 30, 1994	\$255,261	\$743,551	\$626,908	\$1,366,864	100%	100%	59%
June 30, 1996	307,369	768,950	749,888	1,629,706	100	100	74
June 30, 1998	360,422	949,365	988,915	2,113,314	100	100	81
June 30, 2000	572,536 ⁽¹⁾	1,049,012	651,859	2,843,347	100	100	187
June 30, 2002	645,403	1,366,634	1,065,727	3,076,781	100	100	100
June 30, 2004	684,607	1,640,145	1,189,333	3,047,287	100	100	61
June 30, 2005	701,851	1,756,674	1,261,473	3,179,010	100	100	57
June 30, 2006	718,260	1,895,838	1,305,215	3,459,084	100	100	65

Note:

⁽¹⁾ Prior to 2000, "active member accounts" included Regular Contributions without interest for active and inactive members. Beginning in 2000, "active member accounts" includes Regular and Additional Contributions with interest, and excludes all accounts of inactive members.



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MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Appendix A

Actuarial Methods and Assumptions

This section of the report describes the actuarial methods and assumptions used in this valuation. These methods and assumptions have been chosen by the Retirement Board based on our recommendations. The Retirement Board has the sole authority to select the methods and assumptions used in this actuarial valuation. The recommendations were formed on the basis of recent experience of the System and on current expectations as to future economic conditions.

The assumptions are intended to estimate the future experience of the System and the members of the System in areas which affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in the estimated costs of the System's benefits.

In our opinion, the current actuarial methods and assumptions are reasonable and appropriate for this System. The assumptions were developed in accordance with generally recognized and accepted actuarial principles and practices that are consistent with applicable Standards of Practice adopted by the American Academy of Actuaries.

Records and Data

The data used in the valuation consist of financial information and records of age, service, account balances, benefits in pay status and income of contributing members, former contributing members and their survivors. All of the data were supplied by the System and are accepted for valuation purposes without audit.

Actuarial Cost Method

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to when they are earned, rather than when they are paid. There are a number of methods in use for making a determination.

The funding method used in this valuation is the Entry Age Cost Method. Under this method the actuarial present value of projected benefits for each individual member included in the valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Normal Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future Normal Costs is called the Actuarial Liability.

The excess of the Actuarial Liability over the Actuarial Value of Assets is called the Unfunded Actuarial Liability. If the Actuarial Value of Assets exceeds the Actuarial Liability, the difference is called the Actuarial Surplus.



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Asset Valuation Method

Asset values were supplied by the System and were accepted without audit by us. The Actuarial Value of Assets is the market value, adjusted by a four-year recognition of gains and losses.

Investment Return

The future investment earnings of the assets of the plan are assumed to accrue at a net annual rate of 8.00%, net of all administrative and investment-related expenses.

Interest on Member Contributions

Interest on member contributions is assumed to accrue at a net annual rate of 5.00%.

Future Salaries

Estimates of future salaries are based on two types of assumptions. Rates of increase in the general wage level of the membership are directly related to inflation, while individual salary changes due to promotion and longevity, referred to as the merit scale, occur even in the absence of inflation. The assumed increase in future salaries due to general wage growth is 4.25% per year. The merit scale, assumed in addition to general wage growth, is shown in Table A-2.

Service Retirement

The assumed rates of retirement used in this valuation are shown in Table A-3.

All vested terminated members are assumed to retire when first eligible for an unreduced benefit.

Disablement

The assumed rates of disablement are illustrated in Table A-4 at specified ages. We also assume that all disabilities are permanent, and no disabled member will recover and return to work.

Mortality

The probabilities of mortality are based on the following published tables:

Healthy Retirees, Beneficiaries and Non-Retired Members

Males	1994 Male Uninsured Pensioner Table (-1)
Females	1994 Female Uninsured Pensioner Table (-1)

Disabled Retirees

Males	IRS Revenue Ruling 96-7 Male Table (-3)
Females	IRS Revenue Ruling 96-7 Female Table (+1)

These rates are illustrated in Table A-5.



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Other Terminations of Employment

The assumed rates of termination, other than for retirement, death, or disability, are shown in Table A-6.

Benefits for Terminating Members

The probability of a terminating member electing a refund of the member account balance is shown in Table A-7.

Probability of Marriage

100% of all non-retired members are assumed to be married. Male spouses are assumed to be three years older than female spouses.

Changes in Actuarial Assumptions Made for this Valuation

The following method and assumptions were revised since the last valuation:

Actuarial Methods

- ♦ None

Economic Assumptions

- ♦ None

Demographic Assumptions

- ♦ None



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table A-1

Summary of Valuation Assumptions
(June 30, 2006)

I. Economic assumptions

A. General wage increases	4.25%
B. Investment return	8.00%
C. Interest on member accounts	5.00%

II. Demographic assumptions

A. Individual salary increase due to promotion and longevity	Table A-2
B. Retirement	Table A-3
C. Disablement	Table A-4
D. Mortality among contributing members, service retired members, and beneficiaries 1994 Uninsured Pensioner Mortality Table, with ages set back 1 year for males and ages set back 1 year for females	Table A-5
E. Mortality among disabled members Based on the IRS Social Security Disabled Mortality Tables published in Revenue Ruling 96-7 for pre-1995 disabilities with ages set back 3 years for males and set forward 1 year for females.	Table A-5
F. Other terminations of employment	Table A-6
G. Probability of retaining membership in the System upon vested termination	Table A-7



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table A-2

Merit Salary Increases

<u>Service</u>	<u>Annual Increase</u>
1	6.00%
2	4.90
3	3.90
4	3.10
5	2.40
6	1.80
7	1.40
8	1.00
9	0.70
10	0.50
11-15	0.30
16-20	0.10
21 & over	0.00



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table A-3

**Retirement
Annual Rates**

Age	< 30 Yrs	w/ 30 Yrs	Age	< 30 Yrs	w/ 30 Yrs
Under 50	-	10%	61	15%	15%
			62	25	25
50 - 54	3%	10	63	15	15
			64	15	15
55	3	15	65	30	30
56	4	15	66	30	30
57	5	15	67	25	25
58	5	15	68	25	25
59	6	15	69	25	25
60	8	15	70 & over	100	100



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table A-4

**Disablement
Annual Rates**

<u>Age</u>	<u>Male</u>	<u>Female</u>
22	-	-
27	0.01%	0.01%
32	0.01	0.01
37	0.06	0.03
42	0.09	0.15
47	0.17	0.15
52	0.36	0.30
57	0.62	0.36
62	0.00	0.00



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table A-5

Mortality
Annual Rates

Age	Healthy Members		Disabled Retirees	
	Male	Female	Male	Female
50	0.250%	0.141%	2.085%	1.697%
55	0.428	0.224	2.587	1.976
60	0.762	0.415	3.194	2.344
65	1.391	0.819	3.933	2.828
70	2.336	1.367	4.900	3.492
75	3.661	2.192	6.468	4.710
80	6.007	3.802	8.522	6.346
85	9.636	6.557	10.971	9.015
90	14.995	11.247	14.405	13.322
95	23.194	18.352	19.372	20.176



Table A-6

**Other Terminations of Employment
Annual Rates**

Service	Male Members			Female Members		
	Age <30	30-39	Age>40	Age <30	30-39	Age>40
0	30%	22%	15%	30%	22%	18%
1	25	15	12	25	16	13
2	16	12	10	16	14	10
3	14	10	8	14	11	9
4	10	8	6	10	8	8
5-9	6	6	5 *	5	5	5 *
10-14	3	3	3 *	4	4	3 *
15 & over	-	2	2 *	-	2	2 *

* No other terminations of employment are assumed after attainment of age 55 with 5 years of service.



Table A-7

**Probability of Electing a Refund
of Member Contributions Upon Termination**

<u>Age at Termination</u>	<u>Non-Vested</u>	<u>Vested</u>
Under 35	100%	50%
35 - 39	100	40
40 - 44	100	40
45 - 49	100	35
50 & over	100	30



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

Appendix B

Provisions of Governing Law

All of the calculations contained in this report are based on our understanding of the benefit and eligibility provisions of the system. The provisions used in this valuation are summarized below for reference purposes.

Normal Retirement	Eligibility:	Age 65 regardless of membership service, or Age 60 and 5 years of membership service, or 30 years of membership service regardless of age.
	Benefit:	Years of service credit, multiplied by highest average compensation (highest 36 consecutive months), multiplied by $1/56^{\text{th}}$ if membership service at retirement is less than 25 years, or multiplied by $1/50^{\text{th}}$ if membership service at retirement is at least 25 years.
	Normal Form:	Monthly benefit for the life of the member, with a death benefit equal to the remaining balance of the member's contribution account.
Early Retirement	Eligibility:	Age 50 and 5 years of membership service, or 25 years of membership service regardless of age.
	Benefit:	Actuarial equivalent of the accrued benefit based on retirement at age 60 or 30 years of membership service.
Disability Retirement	Eligibility:	5 years of membership service
	Benefit:	If hired on or before February 24, 1991, the greater of (a) and (b) below: (a) Years of service credit, multiplied by highest average compensation, multiplied by 90% of $1/56^{\text{th}}$ ($1/50^{\text{th}}$ if 25 or more years of membership service), or (b) Highest average compensation multiplied by 25%.
		If hired after February 24, 1991: (a) Years of service credit, multiplied by highest average compensation, multiplied by $1/56^{\text{th}}$ ($1/50^{\text{th}}$ if 25 or more years of membership service).



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

Death before Retirement	Eligibility:	Prior to 5 years of membership service
	Benefit:	The sum of (a) and (b) below: (a) Return of member contributions with interest, (b) Lump sum payment of one month's salary multiplied by years of service credit, up to a maximum of six months' salary.
	Eligibility:	5 years of membership service
	Benefit:	Either the sum of (a) and (b), or (c) below: (a) Return of member contributions with interest, and (b) Lump sum payment of one month's salary multiplied by years of service credit, up to a maximum of six months' salary, or (c) Actuarial equivalent of the accrued benefit at the time of death of the member.
Termination Benefit	Eligibility:	Prior to 5 years of membership service
	Benefit:	Return of member contributions with interest.
	Eligibility:	5 years of membership service
	Benefit:	Either (a) or (b) below: (a) Return of member contributions with interest, or (b) Actuarial equivalent of the accrued benefit based on a retirement age of 60.
Benefit Adjustments	Eligibility:	Retired members and beneficiaries.
	Benefit:	An annual adjustment (GABA) of 3.0% commencing January 1 st , one year after retirement.
Contributions	Members:	6.90% of members' compensation
	Employers:	6.90% of members' compensation (offset by 0.10% of members' compensation paid by the State for local government and school district employers).



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2005

Appendix C

Valuation Data

This valuation is based upon the membership of the System as of June 30, 2006. Membership data were supplied by the System and accepted for valuation purposes without audit. However, tests were performed to ensure that the data are sufficiently accurate for valuation purposes.

Table C-1 contains summaries of the data for contributing members. Values shown in the tables are the numbers of members and their total and average annual salaries.

<u>Active Members</u>	<u>Annual Salaries in Millions</u>	<u>Average Annual Salary</u>
27,962	\$892.8	\$31,930

Table C-2 presents distributions of the following:

- Members receiving service retirement benefits.
- Members receiving disability retirement benefits.
- Survivors of deceased members receiving benefits.
- Terminated vested members.

<u>Type of Annuitant</u>	<u>Number</u>	<u>Annual Benefits in Thousands</u>	<u>Average Annual Benefits</u>
Service Retirement	12,950	\$ 135,979	\$ 10,500
Disability Retirement	795	5,935	7,465
Survivors of Deceased Members	<u>1,909</u>	<u>15,085</u>	<u>7,902</u>
Total Annuitants	15,654	\$ 156,999	\$ 10,029

<u>Terminated Members</u>	<u>Number</u>
Vested Terminated Members	2,530
Non-Vested Terminated Members	<u>7,178</u>
Total Terminated Members	9,708



**MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006**

**Table C-1
Active Members Distribution of
Members and Salaries**

as of June 30, 2006

Number of Members - By Age Group - DBRP Members

Age	Completed Years of Service													Totals
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+		
Under 25	313	108	55	30	6	-	-	-	-	-	-	-	512	
25 to 29	486	313	193	235	131	-	-	-	-	-	-	-	1,358	
30 to 34	407	262	173	312	414	85	-	-	-	-	-	-	1,653	
35 to 39	669	283	180	321	610	348	85	1	-	-	-	-	2,497	
40 to 44	453	303	201	419	770	499	439	125	2	-	-	-	3,211	
45 to 49	531	387	314	533	1,022	751	656	415	248	7	-	-	4,864	
50 to 54	448	344	286	487	1,090	876	757	619	534	177	3	-	5,621	
55 to 59	339	244	173	366	877	769	734	534	448	276	47	-	4,807	
60 to 64	128	118	100	197	457	379	423	284	224	109	62	10	2,491	
65 to 69	54	37	28	68	138	109	100	70	47	18	13	3	685	
70 & Over	30	26	15	32	58	35	27	16	14	5	2	3	263	
Totals	3,858	2,425	1,718	3,000	5,573	3,851	3,221	2,064	1,517	592	127	16	27,962	

MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table C-1

**Active Members Distribution of
Members and Salaries**
as of June 30, 2006
Annual Salaries in Thousands – By Age Group – DBRP Members

Age	Completed Years of Service													Totals
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+		
Under 25	6,857	2,303	1,220	723	187	-	-	-	-	-	-	-	11,290	
25 to 29	12,210	8,047	5,339	7,199	4,112	-	-	-	-	-	-	-	36,907	
30 to 34	10,431	7,079	5,031	9,541	14,396	3,160	-	-	-	-	-	-	49,638	
35 to 39	16,606	6,946	5,134	9,734	21,326	14,347	3,480	36	-	-	-	-	77,609	
40 to 44	11,165	7,524	4,861	11,425	24,537	19,245	18,143	5,347	85	-	-	-	102,332	
45 to 49	12,879	8,478	7,972	14,082	31,189	27,309	26,593	17,768	11,117	340	-	-	157,727	
50 to 54	10,957	7,881	7,324	12,914	32,004	28,924	29,834	27,637	24,747	8,258	165	-	190,645	
55 to 59	8,601	5,390	4,044	9,805	24,850	25,681	26,257	21,047	19,928	14,054	2,489	-	162,146	
60 to 64	2,775	3,071	2,119	4,924	13,404	11,484	14,373	11,011	9,087	4,961	2,988	479	80,676	
65 to 69	981	499	475	1,762	3,102	2,813	3,134	2,158	1,598	975	564	154	18,215	
70 & Over	422	357	227	581	1,097	983	705	528	412	151	84	93	5,640	
Totals	93,884	57,575	43,746	82,690	170,204	133,946	122,519	85,532	66,974	28,739	6,290	726	892,825	

MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table C-1
Active Members Distribution of
Members and Salaries

as of June 30, 2006

Average Annual Salary - By Age Group - DBRP Members

Completed Years of Service

Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
Under 25	21,908	21,326	22,184	24,113	31,096	-	-	-	-	-	-	-	22,052
25 to 29	25,124	25,708	27,665	30,633	31,386	-	-	-	-	-	-	-	27,177
30 to 34	25,630	27,019	29,080	30,579	34,773	37,176	-	-	-	-	-	-	30,029
35 to 39	24,823	24,542	28,525	30,325	34,961	41,226	40,937	36,291	-	-	-	-	31,081
40 to 44	24,648	24,831	24,186	27,267	31,866	38,568	41,329	42,772	42,394	-	-	-	31,869
45 to 49	24,254	21,906	25,388	26,421	30,517	36,364	40,538	42,814	44,828	48,550	-	-	32,427
50 to 54	24,457	22,910	25,610	26,517	29,361	33,019	39,411	44,648	46,343	46,658	55,079	-	33,917
55 to 59	25,373	22,090	23,374	26,790	28,336	33,395	35,773	39,414	44,483	50,920	52,956	-	33,731
60 to 64	21,681	26,022	21,189	24,993	29,330	30,301	33,978	38,773	40,565	45,517	48,190	47,904	32,387
65 to 69	18,162	13,482	16,954	25,913	22,478	25,806	31,336	30,825	34,002	54,168	43,410	51,194	26,589
70 & Over	14,054	13,736	15,134	18,148	18,915	28,094	26,122	32,979	29,404	30,165	42,109	31,041	21,443
Totals	24,335	23,742	25,464	27,563	30,541	34,782	38,038	41,440	44,149	48,546	49,531	45,359	31,930

**MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006**

Table C-1

**Active Members Distribution of
Members and Salaries**

as of June 30, 2006

Number of Members - By Age Group - DCRP & ORP Members

Completed Years of Service

Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
Under 25	21	10	4	1	-	-	-	-	-	-	-	-	36
25 to 29	39	68	42	41	15	-	-	-	-	-	-	-	205
30 to 34	35	55	55	62	73	7	-	-	-	-	-	-	287
35 to 39	30	57	38	62	98	22	-	-	-	-	-	-	307
40 to 44	29	47	40	42	59	31	6	2	-	-	-	-	256
45 to 49	20	61	49	65	68	44	11	3	-	-	-	-	321
50 to 54	33	44	35	36	54	26	8	-	2	1	-	-	239
55 to 59	25	24	23	25	21	14	7	1	2	-	-	-	142
60 to 64	8	12	10	8	5	2	2	-	-	-	-	-	47
65 to 69	1	2	-	2	3	1	-	-	-	-	-	-	9
70 & Over	1	1	1	-	-	-	-	-	-	-	-	-	3
Totals	242	381	297	344	396	147	34	6	4	1	-	-	1,852

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MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table C-1

**Active Members Distribution of
Members and Salaries**

as of June 30, 2006

Annual Salaries in Thousands - By Age Group - DCRP & ORP Members

Age	Completed Years of Service													Totals
	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+		
Under 25	492	294	97	15	-	-	-	-	-	-	-	-	898	
25 to 29	1,068	1,870	1,471	1,343	468	-	-	-	-	-	-	-	6,220	
30 to 34	897	1,775	2,023	2,069	2,894	294	-	-	-	-	-	-	9,952	
35 to 39	890	1,663	1,305	2,061	3,717	974	-	-	-	-	-	-	10,610	
40 to 44	699	1,446	1,249	1,333	2,272	1,105	217	64	-	-	-	-	8,385	
45 to 49	587	1,811	1,565	1,956	2,315	1,781	417	161	-	-	-	-	10,593	
50 to 54	860	1,261	1,090	974	1,564	808	267	-	60	33	-	-	6,917	
55 to 59	777	555	754	823	608	392	200	32	84	-	-	-	4,225	
60 to 64	230	314	297	234	176	74	56	-	-	-	-	-	1,381	
65 to 69	22	131	-	31	41	21	-	-	-	-	-	-	246	
70 & Over	13	15	9	-	-	-	-	-	-	-	-	-	37	
Totals	6,535	11,135	9,860	10,839	14,055	5,449	1,157	257	144	33	-	-	59,464	

MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table C-1

**Active Members Distribution of
Members and Salaries**

as of June 30, 2006

Average Annual Salary - By Age Group - DCRP & ORP Members

Completed Years of Service

Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
Under 25	23,435	29,421	24,298	15,147	-	-	-	-	-	-	-	-	24,963
25 to 29	27,394	27,499	35,034	32,745	31,210	-	-	-	-	-	-	-	30,344
30 to 34	25,630	32,278	36,781	33,363	39,650	42,057	-	-	-	-	-	-	34,678
35 to 39	29,682	29,179	34,349	33,247	37,925	44,275	-	-	-	-	-	-	34,563
40 to 44	24,089	30,775	31,215	31,730	38,513	35,655	36,205	32,116	-	-	-	-	32,755
45 to 49	29,352	29,681	31,932	30,100	34,044	40,476	37,908	53,592	-	-	-	-	32,998
50 to 54	26,048	28,660	31,157	27,067	28,954	31,090	33,330	-	29,753	33,374	-	-	28,941
55 to 59	31,091	23,132	32,787	32,916	28,962	27,973	28,633	31,986	41,974	-	-	-	29,758
60 to 64	28,782	26,181	29,703	29,246	35,269	37,167	28,184	-	-	-	-	-	29,414
65 to 69	22,152	65,305	-	15,477	13,632	20,585	-	-	-	-	-	-	27,244
70 & Over	12,780	15,001	9,410	-	-	-	-	-	-	-	-	-	12,397
Totals	27,007	29,227	33,203	31,508	35,494	37,072	34,049	42,833	35,864	33,374	-	-	32,110

MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table C-2

Distribution of Inactive Lives

Members Receiving Service Retirement Benefits as of June 30, 2006

<u>Age</u>	<u>Number of Persons</u>	<u>Annual Benefit in Thousands</u>	<u>Average Annual Benefits</u>
Under 50	23	472	20,532
50 to 54	325	5,567	17,131
55 to 59	1,003	16,198	16,149
60 to 64	1,887	24,807	13,146
65 to 69	2,583	28,403	10,996
70 to 74	2,261	22,220	9,828
75 to 79	1,970	16,735	8,495
80 to 84	1,438	11,146	7,751
85 to 89	1,002	7,205	7,190
90 & Over	458	3,226	7,045
Total	12,950	135,979	10,500

Members Receiving Disability Retirement Benefits as of June 30, 2006

<u>Age</u>	<u>Number of Persons</u>	<u>Annual Benefit in Thousands</u>	<u>Average Annual Benefits</u>
Under 50	43	330	7,668
50 to 54	108	831	7,694
55 to 59	166	1,347	8,114
60 to 64	139	1,006	7,238
65 to 69	113	736	6,510
70 to 74	81	501	6,188
75 to 79	65	451	6,941
80 to 84	45	340	7,553
85 to 89	25	267	10,690
90 & Over	10	126	12,575
Total	795	5,935	7,465



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table C-2

Distribution of Inactive Lives

Survivors of Deceased Members Receiving Retirement Benefits as of June 30, 2006

<u>Age</u>	<u>Number of Persons</u>	<u>Annual Benefit in Thousands</u>	<u>Average Annual Benefits</u>
Under 50	128	651	5,085
50 to 54	75	487	6,495
55 to 59	127	1,047	8,246
60 to 64	132	1,203	9,113
65 to 69	202	1,892	9,367
70 to 74	256	2,288	8,936
75 to 79	293	2,415	8,244
80 to 84	326	2,397	7,352
85 to 89	233	1,597	6,856
90 & Over	137	1,108	8,086
Total	1,909	15,085	7,902

Terminated Vested Members as of June 30, 2006

Number of Persons

<u>Age</u>	<u>Number</u>
Under 25	-
25 to 29	25
30 to 34	57
35 to 39	180
40 to 44	321
45 to 49	557
50 to 54	655
55 to 59	507
60 to 64	181
65 to 69	36
70 & Over	11
Total	2,530



Active Membership Data History

Valuation Date (June 30)	Active Members					
	Total Contributing Members	Annual Salaries in Thousands	Average Annual Salary	Average Age	Average Years of Service	Average Hire Age
1998	28,091	\$660,588	\$23,516	44.9	8.8	36.1
2000	29,500	739,831	25,079	45.4	8.8	36.6
2002	29,808	815,130	27,346	46.2	9.1	37.1
2004	28,201	831,564	29,487	47.3	9.8	37.5
2005	28,213	854,570	30,290	47.6	9.9	37.7
2006	27,962	892,825	31,930	48.0	9.9	38.1

MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Table C-4

Retired and Inactive Membership Data History

Valuation Date (June 30)	All Annuitants			Terminated Members	
	Number	Annual Benefits in Thousands	Average Annual Benefit	Number Vested Terminated	Number Non-Vested Terminated
1998	12,924	87,115	6,741	1,653	8,474
2000	13,572	97,147	7,158	1,813	9,966
2002	14,116	115,613	8,190	2,150	10,944
2004	14,834	135,207	9,115	2,362	9,132
2005	15,220	145,150	9,537	2,418	8,153
2006	15,654	156,999	10,029	2,530	7,178

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MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Appendix D

Glossary

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases, the definitions have been modified for specific applicability to this System. Defined terms are capitalized throughout this Appendix.

Actuarial Assumptions:	Assumptions as to the occurrence of future events affecting pension costs, such as mortality, withdrawal, disablement, and retirement, changes in compensation, rates of investment earnings and asset appreciation or depreciation, procedures used to determine the Actuarial Value of Assets, and other relevant items.
Actuarial Cost Method:	A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Liability.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.
Actuarial Liability:	That portion, as determined by a particular Actuarial Cost method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.
Actuarial Present Value:	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.
Actuarial Surplus:	The excess, if any, of the Actuarial Value of Assets over the Actuarial Liability.
Actuarial Valuation:	The determination, as of a Valuation Date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a retirement plan.



MONTANA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2006

Actuarial Value of Assets:	The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.
Actuarial Equivalent:	Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.
Entry Age Cost Method:	An actuarial cost method under which the Actuarial Present Value of Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Liability.
Normal Cost:	The portion of the Actuarial Present Value of Projected Benefits which is allocated to a valuation year by the Actuarial Cost Method.
Unfunded Actuarial Liability:	The excess, if any, of the Actuarial Liability over the Actuarial Value of Assets.
Valuation Date:	June 30, 2006.

